

Notice of Allowability

Applicati n N .

10/646,209

Examiner

Burton S. Mullins

Applicant(s)

ELLERTHORPE ET AL.

Art Unit

2834

-- The MAILING DATE f this c mmunication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to application papers filed September 22nd, 2003.
2. ☒ The allowed claim(s) is/are 1-20.
3. ☒ The drawings filed on September 22nd, are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachm nt(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

Burton S. Mullins
Primary Examiner
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REASONS FOR ALLOWANCE

1. The following is an examiner's statement of reasons for allowance: The prior art does not teach a motor system and method including a detector which monitors a motor command voltage spectrum or signal for the presence of at least one stall indicating harmonic (claims 1, 14 and 16). Freeman (US '169) teaches a closed-loop driving arrangement for a brushless DC motor including a harmonic detection circuit 12 (Fig.1) which in combination with motor phase windings 10 and difference amplifier 14 senses and detects zero crossings of the third harmonic back emf to indicate position. However, there is no teaching or suggestion that Freeman uses this back emf signal as a "stall indicating harmonic". Further, although Freeman does not limit the harmonic component to the third harmonic (c:23, line 15-19), it is not clear that Freeman teaches or suggest monitoring of the motor command voltage spectrum.

Holling et al. (US '218) teaches a sensorless method of determining commutation position and a stalled condition based on differentiation of the waveform of the electric current in the active coil. Suzuki teaches use of fundamental and harmonic waves for determining whether a polyphase synchronous machine should be protected. There is no teaching in either of monitoring a command voltage waveform for the presence of at least one stall indicating harmonic.

Engel et al. ('527) generally pertains to sampling waveforms in a circuit breaker for harmonics, but does not teach or suggest use on a motor or for a motor command voltage spectrum.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the

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issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on October 2nd, 2003 has been considered by the examiner.

Conclusion

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Burton S. Mullins whose telephone number is 571-272-2029. The examiner can normally be reached on Monday-Friday, 9 am to 5 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 571-272-2034. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


BURTON S. MULLINS
PRIMARY EXAMINER